

PHOSPHORESCENT LIGHT EMITTING BEVERAGE CONTAINER

5 Cross-Reference to Related Application:

This application claims the benefit under 35 U.S.C. § 119(e) of copending provisional application No. 60/392,852, filed July 2, 2002.

10 Background of the Invention:

Field of the Invention:

This invention relates to a beverage container having phosphorescent luminosity for the purpose of reading and or decoration in the absence of any other source of light. More  
15 practically, the luminosity could be emitted from any lettering, marking, partial covering or complete covering on the beverage container from which the luminosity allows for reading (as do regular lamps, candles or flashlights) or to be used as a decorative ornament.

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Background of the Invention

Beverage containers are everyday products used in most places around the world. The intent is to use these everyday products as portals of light. In many parts of the world,  
25 light source is a problem. In these same rural areas literacy tends to be low partially because of the lack of visibility

after the sunset. Phosphorescent light emitting from a beverage container, at present, can allow for up to an hour of good reading light and can be recharged simply by resting in the sun for 5 minutes or more (or it can be charged by any other light source). The recharging ability of this light source allows it to be useful infinitely.

In these rural areas and in areas around the world where after-dark light source is not a challenge, this invention is a great source of decorative fun. It can be used as lanterns at parties, driveway markings Christmas tree ornaments or in whichever decorative manner the owner wishes.

Description of the Related Art:

Luminescent articles and devices such as indicators, containers, bottles, lampshades, and labels have been disclosed in the prior art. For example, U.S. Pat. No. 4,708,817 to DUDNICK discloses a container having a latent message on the container's surface is coated with a luminescent, phosphorescent and/or fluorescent material, such that the warning message glows and is clearly discernible in the dark. This prior art patent does not disclose or teach a beverage container having luminosity, being a luminescent coating thereon or luminescent pigment in its material, for reading or decorative purposes in the absence of any other light source.

U.S. Pat. No. 4,943,896 to JOHNSON discloses a method of producing improved infant care articles, such as baby bottle assemblies, characterized by the inclusion of a non-toxic, non-irritating phosphorescent material with the material of construction of components of the infant care articles so that such components phosphorescently emit light visible in the darkened environment, allowing the location and position of the articles to be readily determined without the need for an additional light source. This prior art patent does not disclose or teach a beverage container having luminosity, being a luminescent coating thereon or luminescent pigment in its material, for reading or decorative purposes in the absence of any other light source.

U.S. Pat. No. 5,172,937 to SACHETTI discloses structures, such as labels on beer bottles having fluorescent and phosphorescent materials that emit and reflect light to provide a sense of identity to the beer bottle. The label is in the form of a blanket that has a protective grid of phosphorescent material thereon, such that when the phosphorescent material is exposed to light and placed in a dark environment the beer bottle label emits light for a period of time. The protective grid is a pattern of intersecting ribbons of phosphorescent material anchored to and covering substantially on surface of the label. The

protective grid provides a visual light shield that creates an image of identification for that label. This prior art patent does not disclose or teach a beverage container having luminosity, being a luminescent coating thereon or luminescent pigment in its material, for reading or decorative purposes in the absence of any other light source.

U.S. Pat. No. 5,654,552 to TOOMBS discloses a glow-in-the-dark lampshade that includes a glow-in-the-dark region with a first side disposed toward a light source so that the light source illuminates the first side and with a second side disposed away from the light source. The glow-in-the-dark region includes a glow-in-the-dark substance that stores energy from illumination and that responds to the stored energy by emitting light in the visible range. This prior art patent does not disclose or teach a beverage container having luminosity, being a luminescent coating thereon or luminescent pigment in its material, for reading or decorative purposes in the absence of any other light source.

U.S. Pat. No. 5,752,761 to PIETRUCZYNIK discloses a high visibility flashlight body having a luminescent outer surface on the main body and closure cap. The outer surface includes a luminescent colorant composition in the based material, being distributed throughout the thickness of the main body. This prior art patent does not disclose or teach a beverage

container having luminosity, being a luminescent coating thereon or luminescent pigment in its material, for reading or decorative purposes in the absence of any other light source.

5 None of these prior art patents disclose or teach a beverage container having luminosity, being a luminescent coating thereon or luminescent pigment in its material, for reading or decorative purposes in the absence of any other light source.

10 Summary of the Invention:

Accordingly, it is an object of the present invention to provide a beverage container having luminosity, being a luminescent coating thereon or luminescent pigment in its material, for reading or decorative purposes in the absence of  
15 any other light source.

Accordingly, an advantage of this present invention is that it provides a limited but useful amount of reading light (in the absence of any other light) to less developed areas, where  
20 reading light at night is a challenge, for marginally more than what one might pay for a beverage.

Another advantage of this present invention is that is provides a means with which developing and more developed  
25 countries can relatively inexpensively assist less developed

nations with reading disabilities caused by inadequate light sources.

Another advantage of this invention is that provides a  
5 decorative utility for individuals looking to decorate areas or objects in the absence of any other light, for example, one can use the full or empty containers to decorate a Christmas tree or a beach party scene.

10 Other features which are considered as characteristic for the invention are set forth in the appended claims.

Although the invention is illustrated and described herein as embodied in a phosphorescent light emitting beverage  
15 container, it is nevertheless not intended to be limited to the details shown, since various modifications and structural changes may be made therein without departing from the spirit of the invention and within the scope and range of equivalents of the claims.

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The construction and method of operation of the invention, however, together with additional objects and advantages thereof will be best understood from the following description of specific embodiments when read in connection with the  
25 accompanying drawings.

Brief Description of the Drawings:

Further objects, features and advantages of the present invention will become apparent upon the consideration of the following description of the attached drawings, wherein:

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Fig. 1 is a beverage carton with phosphorescent ink/paint printed on the exterior surface of the container that illuminates in the absence of any other light.

10 Fig. 2 is a beverage can with phosphorescent ink/paint printed on the exterior surface of the container that illuminates in the absence of any other light.

Fig. 3 is a plastic beverage bottle made with phosphorescent  
15 pigments that illuminates in the absence of any other light.

Fig. 4 is a glass beverage bottle made with phosphorescent pigments that illuminates in the absence of any other light.

20 Fig. 5 is a 'stand-up pouch' beverage container with phosphorescent ink/paint printed on the exterior surface of the container that illuminates in the absence of any other light.

Figs. 6 and 7 are beverage cartons with phosphorescent ink/paint printed on the exterior surface of the container that illuminates in the absence of any other light.

5 Fig.. 8 is a plastic sleeve made with phosphorescent pigments and or coated with phosphorescent ink (partially or entirely) for the purpose of rapping around the exterior of any beverage container and illuminates in the absence of any other light.

10 Fig. 9 is an adhesive label made with phosphorescent pigments and or coated with phosphorescent ink (partially or entirely) for the purpose of adhering to the exterior of a beverage container and illuminates in the absence of any other light.

15 Description of the Preferred Embodiments:

This invention is a composition of existing products. The articles used are as follows:

1 **Phosphorescent pigments.** One example of phosphorescent  
20 pigments which have been employed to form the invention is sold under the trade mark Super Phosphorescent by Shannon Luminous Material Inc. These pigments have an initial brightness equivalent to 3 lit candles;

25 2 **Phosphorescent adhesive sheets.** One example of phosphorescent adhesive sheets which have been employed to



form the invention is sold under the trademark Phosphorescent Tape by Shannon Luminous Materials Inc.

3 **Plastic shrink sleeves**, like those manufactured by Sleeve

5 Co. under the trademark of Shrink Labels; and

4 Beverage containers

4i **aluminum cans**, like those manufactured by Metal Container

10 Corporation ;

4ii **glass bottles**, like those manufactured by California

Glass Company under the trademark of 12oz Heritage;

15 4iii **plastic bottles**, like those manufactured by the BALL

Corporation under the trademark of PET Plastic containers

(polyethylene terephthalate);

4iv **paper carton**, like those supplied by ELOPAK under the

20 trademark of Pure-Pak long life containers;

4v **stand-up pouch containers**, like those supplied by T.H.E.M.

under the trademark of Stand-Up Pouch; and

25 4vi **any other beverage container**.

In order to assemble the invention using a beverage aluminum can 4i shown in Fig. 2, one can add the phosphorescent pigment color(s) 1 of choice to the existing printing process for direct application to the exterior of the can as outlined in the detailed description of the preferred embodiment of Pat. No. 6,501,046. Alternatively, one can apply phosphorescent adhesive sheets 2 shown in Fig. 9 to the exterior of the can in whatever shape, size or lettering desired. Alternatively, one can add an adhesive label, which has phosphorescent pigments 1 as shown in Fig. 9 used in the ink with which the label is printed and subsequently add to the exterior of the can.

In order to assemble the invention using plastic bottles 4iii shown in Fig. 3 or glass bottles 4ii shown in Fig. 4, one can add the phosphorescent pigments color(s) 1 of choice to the plastic or glass while it is in a liquid state, before molding (according to process for making a plastic or glass bottle as described in the detailed description of US Pat. No. D469,288 and D463,288 respectively. The result is a translucent or tinted plastic or glass bottle that has the phosphorescent pigments mixed within its particles. Alternatively, one can cover the glass or plastic bottle with a shrink sleeve 3 shown in Fig. 8 that was made with the phosphorescent pigments 1 or printed thereon (using the process as outlined in US Pat. Application No. 20020119294, paragraphs 23 - 25 of the

detailed description of the preferred embodiment) with phosphorescent pigments 1 mixed in the ink. Alternatively, one can add an adhesive label, which has phosphorescent pigments 1 as shown in Fig. 9 used in the ink with which the label is  
5 printed and applied to the exterior of the glass 4ii shown in Fig. 4 or plastic bottle 4iii shown in Fig. 3.

In order to assemble the invention using beverage cartons 4iv shown in Figs. 1, 6 and 7, one can add the phosphorescent  
10 pigment color(s) 1 of choice to the existing printing ink and process for direct application to the exterior of the carton. Alternatively, one can apply phosphorescent adhesive sheets 2 shown in Fig. 9 to the exterior of the carton in whatever shape, size or lettering desired. Alternatively, one can add  
15 an adhesive label, which has phosphorescent pigments 1 as shown in Fig. 9 used in the ink with which the label is printed and applied to the exterior of the carton.

In order to assemble the invention using beverage stand-up  
20 pouch 4v containers shown in Fig. 5, one can add the phosphorescent pigment color(s) 1 of choice to the existing printing process for direct application to the exterior of the container. Alternatively, one can apply phosphorescent adhesive sheets 2 shown in Fig. 9 to the exterior of the  
25 container in whatever shape, size or lettering desired. Alternatively, one can add an adhesive label, which has

phosphorescent pigments 1 as shown in Fig. 9 used in the ink with which the label is printed to the exterior of the container.

5 In order to assemble the invention using any other beverage container 4vi, one can mix the phosphorescent pigments 1 with the particles of the container providing that the container is translucent. Alternatively, one can apply phosphorescent adhesive sheets 2 shown in Fig. 9 to the exterior of the  
10 container in whatever shape, size or lettering desired. Alternatively, one can add an adhesive label, which has phosphorescent pigments 1 as shown in Fig. 9 used in the ink with which the label is printed to the exterior of the container.

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